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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,131	06/24/2003	Steve Doe	088245-0105	4021
23524	7590	11/16/2007	EXAMINER	
FOLEY & LARDNER LLP 150 EAST GILMAN STREET P.O. BOX 1497 MADISON, WI 53701-1497			CALEY, MICHAEL H	
			ART UNIT	PAPER NUMBER
			2871	
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			11/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/606.131

Applicant(s)

DOE, STEVE

Examiner

Michael H. Caley

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2007.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-12,17,20 and 21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1,4,6-12,17 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 9, 10, 17, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Petruchik (U.S. Patent No. 6,356,323).

Regarding claims 1 and 20, Petruchik discloses a display device having:

- a first electrode (Figure 2A element 30);
- a liquid crystal layer (Figure 2A element 38);
- a second electrode (Figure 2A element 24)
- a switchable optical layer (Figure 2A element 34), having in use either a transparent state or a non transparent state and being electrically switchable between the transparent state and the non-transparent state (Column 3 lines 31-34, Column 3 line 65 – Column 4 line 2), wherein the non transparent state is a reflective state and the switchable optical layer is positioned above and connected to the second electrode (Figure 2A); and

a third electrode (Figure 2A element 28) positioned between the liquid crystal layer and the switchable optical layer, wherein the third electrode is shared by the liquid crystal layer and the switchable optical layer (Column 3 lines 46-52).

Regarding claim 6, Petruchik discloses the switchable optical layer as arranged to be switched as a whole (Column 3 lines 31-34, Column 3 line 65 – Column 4 line 2; Figure 2A element 34).

Regarding claims 9, 10, and 17, Petruchik discloses the second and third electrodes as unitary and transparent electrodes (Column 4 lines 59 and 62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petruchik in view of Ikeno (U.S. Patent No. 5,452,113).

Petruchik discloses the first electrode as transparent (Column 4, parts list). Petruchik fails to explicitly disclose the first electrode as pixellated having associated pixel switches positioned above each one of the distinct electrodes. Ikeno, however, teaches such an

arrangement of a corresponding first electrode combined with a cholesteric liquid crystal material that is pixellated and has associated pixel switches positioned above each one of the distinct electrodes (Column 3 lines 50-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the first electrode as pixellated, distinct electrodes and having associated pixel switches connected to the plurality of distinct electrodes. One would have been motivated to incorporate such pixel switches as a means of forming the electrode as an active matrix to increase switching speed and resolution over the alternative passive matrix display, according to conventional means.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petruchik in view of Wu et al. (U.S. Patent No. 6,462,805 "Wu").

Regarding claim 11, Petruchik fails to disclose first and second polarizers and a backlight. Wu, however, teaches a first polarizer positioned above a first electrode, a second polarizer crossed with the first polarizer and positioned under the second electrode and a backlight positioned under the second polarizer (Figure 1; Column 4 lines 40-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a first polarizer positioned above a first electrode, a second polarizer crossed with the first polarizer and positioned under the second electrode and a backlight positioned under the second polarizer as proposed. One would have been motivated to form polarizers and a backlight as proposed to realize a transmissive display (Column 4 line 63 – Column 5 line 20).

Transmissive displays have advantages conventionally known in the art such as ability for use in a dark environment, such as a closed area or at night.

Regarding claim 12, Petruchik as modified by Wu discloses control means arranged to vary the voltage across the switchable optical layer (Figure 2A elements 21, 23 and 25) and a backlight inherently having a control means to turn on the backlight (Figure 1).

Allowable Subject Matter

Claim 21 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to disclose or suggest the method of controlling a display device in a first mode by selectively controlling portions of the liquid crystal layer and uniformly maintaining the switchable optical layer in a transparent state using the first electrode and operating in a second mode by selectively controlling portions of the liquid crystal layer and uniformly maintaining the switchable optical layer in a reflective state using the first electrode.

Response to Arguments

Applicant's arguments filed 8/22/07 have been fully considered but they are not persuasive.

Regarding the rejection of claim 1, Applicant argues that Petruchik fails to disclose the limitation "a switchable optical layer...being electrically switchable between the transparent state and the non transparent state". Applicant further argues that Petruchik "teaches the use of

materials that are not 'electrically switchable' between two states" and instead uses materials that maintain a state indefinitely (Remarks Page 4).

The examiner disagrees with Applicant's analysis of the reference and maintains the rejection. As previously cited, Petruchik discloses "application of **electrical fields** of various intensity and duration can **change** the state of the chiral doped liquid crystal material from a reflective state to a transmissive state" (Column 3 lines 31-34). Here, Petruchik plainly states that the optical layer (liquid crystal) is "electrically switchable" as application of electrical fields change the state of the liquid crystal.

Petruchik does disclose maintaining the switched state indefinitely after removing the electrical field. Such a property, however, does not take away from that fact that the optical layer's state is changed (switched) by application of electrical fields as described above.

Applicant further argues that since Petruchik states that "the material is 'placed' in a state where colored light is reflected further shows that the light-modulating layer is not 'electrically switchable'". Petruchik, however, has disclosed (Column 3 lines 31-34 and Column 2 lines 57-62) the mechanism through which the material is "placed" in the reflective state as electrical switching.

Lastly, Petruchik discloses the optical layer as a cholesteric liquid crystal (Column 3 lines 19), which is a same type of optical layer as disclosed by Applicant as electrically switchable (Specification: Page 5 line 24). By such virtue alone, it may be deduced that the optical layer disclosed by Petruchik is "electrically switchable".

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Michael H. Caley', with a stylized flourish at the end.

Michael H. Caley
November 2007